



Digitized by the Internet Archive
in 2015

<https://archive.org/details/b22267256>

ON

ABSORBENT AND ANTISEPTIC

SURGICAL DRESSINGS:

A CLINICAL LECTURE

BY

SAMPSON GAMGEE, F.R.S.E.

SURGEON TO THE QUEEN'S HOSPITAL, BIRMINGHAM;
FOREIGN CORRESPONDING MEMBER OF THE ACADEMY OF MEDICINE OF ROME,
AND OF THE SOCIETY OF SURGERY OF PARIS;
ASSOCIATE OF THE SURGICAL SOCIETY OF IRELAND;
LATE PRESIDENT OF THE BIRMINGHAM AND MIDLAND COUNTIES BRANCH OF
THE BRITISH MEDICAL ASSOCIATION.

WITH ENGRAVINGS ON WOOD.

LONDON:

J. AND A. CHURCHILL, NEW BURLINGTON STREET.

—

1880.





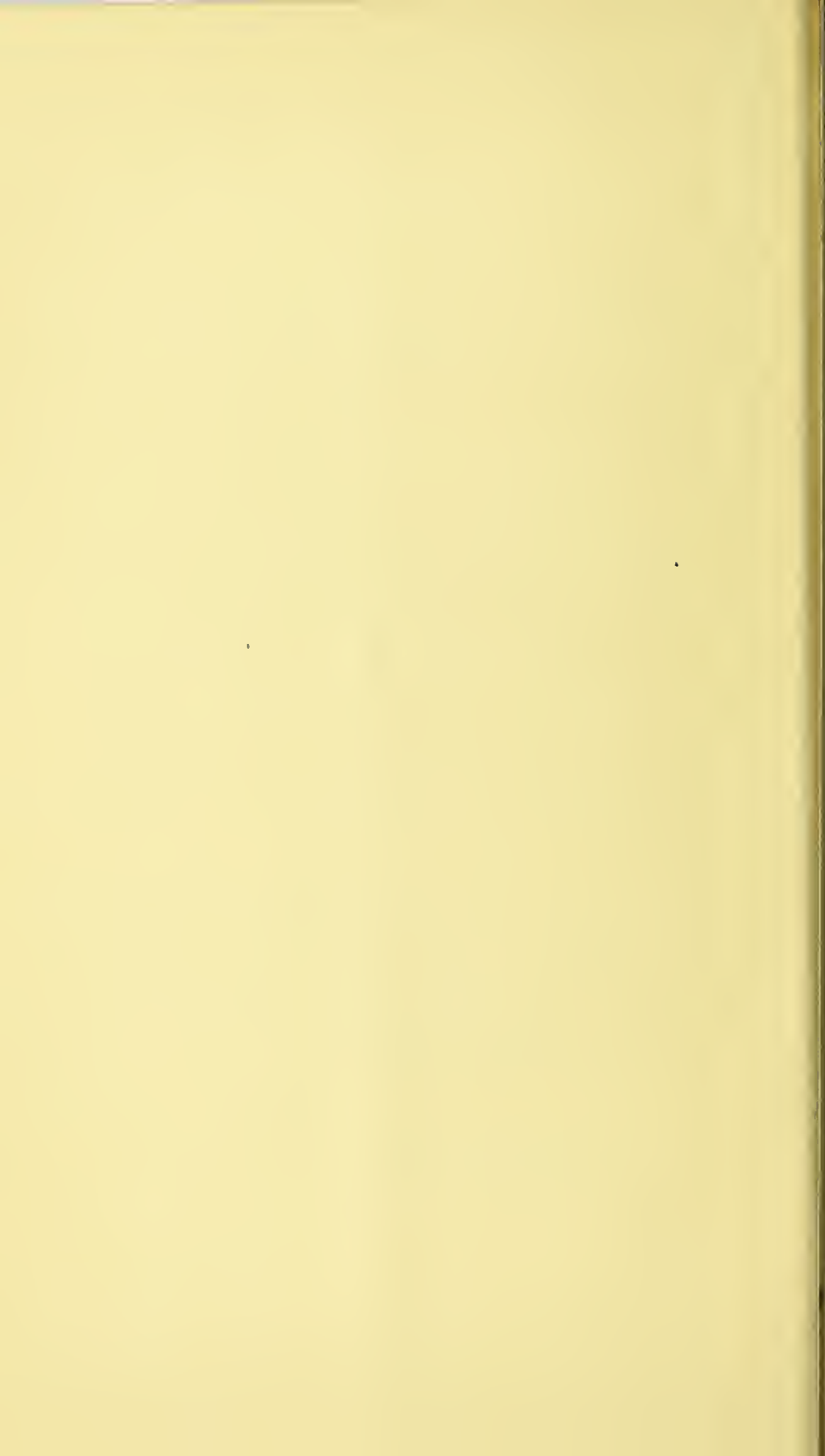
P R E F A C E .

Since the publication of my paper on "Absorbent and Medicated Surgical Dressings" in the *Lancet* of the 24th ultimo, so many applications for the materials have been received, that it has been impossible to comply with them. That difficulty cannot recur, thanks to the co-operation of Messrs. Southall Brothers and Barclay, the well-known manufacturing chemists of this town.

In publishing this Lecture, in substance as delivered this morning to my Hospital Class, I hope to supply, in a convenient form, information which may prove useful to some of my brethren in practice.

22, BROAD STREET, BIRMINGHAM,

18th February, 1880.



ABSORBENT AND ANTISEPTIC SURGICAL DRESSINGS.

GENTLEMEN,

As an illustration of painless, rapid, and sound wound healing, I have to request your attention to the case of Eliza Taylor, aged 75, in the adjoining ward. She was admitted the 30th ult., in a state of very great prostration, having suffered for five days from all the symptoms of strangulated hernia. When I saw her, very shortly after admission, the drawn countenance betokened great suffering, vomiting was frequent, the pulse 104 and very feeble, the body emaciated to an extent rarely witnessed. On the left side, in the region of femoral hernia, was a small tumour on which the taxis had been attempted in vain, by the parish surgeon who had sent the case into the hospital. It was not a case for debate. I directed ether to be administered, and at once cut down upon the tumour. It was necessary to open the sac, before the constricting band could be divided. That done, and the gut restored to the abdominal cavity, I brought the edges of the wound together with two points of silver suture, and over it applied, with gentle pressure, an absorbent cotton wool and gauze pad, with an absorbent spica bandage.

The report next morning was, "Has slept well, has no pain, pulse 100, resp. 24, temp. 98.3." February 2nd (third

day after operation), pulse 90, resp. 24, temp. 98·2; the wound dressed for the first time. A slight amount of discharge had soaked through the bandage and pad. The parts around the wound looked of natural colour and quite healthy. On removal of the sutures the deep parts of wound quite healed. The edges were brought together by strips of plaster, and the dressing completed with an absorbent pad and bandage as before.

February 5th was the date of the second dressing, February 8th of the third. The note this day was, "Pulse 74, resp. 20, temp. 98·4. Only one or two drops of odourless discharge dried on the pad, wound healed."

The next day, the eleventh since the operation, the patient was allowed to get up. She has done so every day since, rapidly improving in general health. You see her now, still of course a very feeble old woman; but, so far as the operation is concerned, the scar is only visible on close inspection, and looks as solid as if it dated from as many months as it does days.

I was called to John Marriott, now before you, at two a.m., Sunday, February 1st. He had a large, tense, and very tender swelling in the right inguinal region, with all the symptoms of acute strangulation. Warm bath and taxis having been tried in vain, ether was administered, and I divided the structures over the neck of the tumour. Reduction could only be effected after I opened the sac. The protruding intestine, which was very considerable in amount, was carefully restored to the abdomen. The wound closed with four points of silver suture, absorbent cotton wool and gauze pads and bandage. The patient slept a few hours, and on waking said "he was comfortable;" but in the evening the temperature rose to 104, and as the urine could not be passed naturally, it had to be drawn with a catheter. The next day the temperature had fallen to 100.

February 3rd.—Some diffused redness of the skin being visible in the right loin above the bandage, I removed the dressing. The pad and bandage were moist over the wound, its edges reddish but united almost throughout. The stitches were evidently tense. I removed them, kept the edges together with strips of plaster and slight pressure, and with a spiral movement, introduced a small piece of drainage tube into the lower angle of the wound, giving exit to nearly an ounce of pus. I covered the wound and the whole extent of redness, with a large absorbent cotton and gauze pad with even and elastic pressure. As the bowels had not acted since the operation, and for two or three days previously, I ordered a gruel enema and five grains of the Pil aloes socot. Soon afterwards the patient had a rigor, and the temperature rose to 105·2. Another gruel enema was administered, the bowels acted very copiously, and the man was at once comfortable.

February 6th—sixth day after operation,—Pulse 88, resp. 24, temp. 98·2. The patient says, “he is very comfortable.” On exposing the wound, the redness all gone, very few drops of discharge in the pad, tube removed, fresh pad and bandage applied. The next day the man was allowed to get up, and to have meat diet. I presented the case at the Midland Medical Society the tenth day after the operation, and the cicatrix was then as solid as it is now. The patient left the hospital the twelfth day.

The perfectly linear cicatrix, and the soft and healthy look of the surrounding skin testify to the readiness with which the wound healed, and to the rapidity with which the effects of the diffuse inflammation disappeared, under the pressure of the elastic absorbent pad. If, according to my usual practice, I had inserted an elastic drainage tube at the lower angle of the wound, at the time of operation, it is probable that the fluid which produced the irritation would have

been carried off at once, and the subsequent tension and its effects would have been averted. As it was, the incident afforded valuable experience, for you saw how rapidly the inflammation disappeared, when the silver stitches were removed, the fluid drained off, and the elastic pressure applied, with a soft absorbent bandage over the absorbent gauze and cotton wool pad.

Let me detain you for a few moments with an experimental demonstration of the action of the materials employed. Here is a piece of the finest cotton wool, such as is ordinarily used by jewellers. You see it floats on water, and rises to the surface any number of times after being pushed to the bottom of the glass. It will float for weeks, as I have proved by repeated trials. I drop into a tumbler of water this pledget of cotton wool, made absorbent by the removal of oily matter and other impurities, and you see that it sinks to the bottom in a very few seconds. I now envelope a pledget of absorbent cotton in a piece of unbleached gauze, such as is commonly used in surgical practice. In spite of the proved absorbing power of the contained cotton, so impermeable is the gauze that the pledget floats and resists forcible immersion. I have had a little pad so made, floating on a tumbler of water in my study for 35 days. If, however, you make a little pad with the absorbent cotton and the same kind of gauze, bleached, you will find the substance sucks up the water with avidity, and sinks at once. So with the bandages. Here is a piece of ordinary calico bandage; it floats in the basin like a plank on a pond. Here is a piece of open wove bandage absorbent; it sinks the instant I drop it on to the water.

Once I had ascertained these facts, I lost no time in putting them to the test of clinical experience, which has demonstrated the great therapeutic value of the absorbent

materials ; discharges drain through them so readily that wounds are kept clean and the surrounding parts dry. Union rapidly and painlessly consolidates under the elastic pressure. So great is the elasticity of the material that the pad I hold in my hand is scarcely flattened, though it has been firmly bandaged on a man's instep for five days. On holding the pad before the fire you see it puff up at once, and quickly regain its original fulness and downy softness.

Here is another pad, soft and elastic, though for a week it has been firmly bandaged to a man's foot, inside a millboard moulded splint. Here is one of the absorbent antiseptic pads which Messrs. Southall Brothers and Barclay have prepared for me, and which is beautifully soft, though it has been tightly screwed down in my copying press for upwards of nine hours.

Experiments which my friend and colleague, Professor Bostock Hill, was good enough to institute at my suggestion, proved that the absorbent materials lose none of their physical properties when treated with borax, iodine, tannin, and similar substances. Those researches have been continued, and largely extended with a view to practical application, by Messrs. Southall Brothers and Barclay. Besides the substances named, benzoic and carbolic acid have been employed, and before you are gauze and cotton wool tissue, pads and bandages, perfectly absorbent and elastic, and powerfully styptic and antiseptic.

It is foreign to my present purpose to detain you with any theoretical speculations. It may be argued that the cotton wool acts as a germ filter, as well as an aspirator and an elastic medium of equable compression. Let us get at the facts before we speculate. Certain it is, that the perfect softness and elasticity of these absorbent materials are of the utmost practical value and comfort. Those qualities render possible, with the most perfect safety,

the application of that elastic compression which, with rest and position, is so potent in relieving local congestion and inflammation. That therapeutic action is most clearly and convincingly demonstrated in cases of injury unaccompanied with wound.

In my clinical lectures on the Treatment of Fractures * I have related a case to which I may briefly refer, as it afforded exceptional opportunity for the comparison of two plans of treating intense local congestions.

Ellen M'Gawlay was admitted to Ward 5, under my care, after falling a considerable height from a window which she was cleaning. Evaporating lotion was applied constantly to both feet until I first saw the patient, which was five days after the accident. Both feet were then about equally swollen, the outline of the malleoli quite obliterated, skin deeply mottled as from extravasation of blood. The right heel bone broken across the middle. To the right limb, from the toes to the knee, I applied a compressing immovable apparatus, constructed with cotton wool, moistened pasteboard, and bandage. The left foot, which was equally swollen, but less injured since it had no fracture, was continuously treated with evaporating lotion. The effect of pressure in relieving pain and reducing the swelling was immediate and continuous. In 48 hours the outline of the right ankle was perfect, while the swelling of the left one was undiminished. Both feet eventually regained their shape and function, but it was only by very slow degrees that the swelling decreased in the left foot, which had not been immobilized and compressed.

In last month's PRACTITIONER I gave an account of a case which most of you will remember as having been under treatment a few weeks previously in our detached wards. The man had earned his living as a hawker, and been

* Churchill, London, 1871, p, 85.

a hard drinker. On admission, the right leg was of greatly increased size, and of deep purple colour; the skin tense and shining, and intensely sensitive to the slightest touch. Circular measurement of the two legs gave the following result :—

	Right.	Left.
At the middle of the patella	$18\frac{1}{2}$ inches.	17 inches.
Six inches below	18 „	17 „
Round the malleoli . . .	14 „	$11\frac{1}{4}$ „

I enveloped the limb in cotton wool, over which I constructed a millboard and bandage compressing lattice-work. On the expiration of twelve hours the bandages were very loose, in consequence of the considerable subsidence of swelling which had taken place. I applied another bandage with firmer pressure, and suspended the limb. In the course of another twelve hours (24 hours from the first application), I dictated the following note at the bedside.

“Has been very easy all day. On removing the apparatus the limb is much paler and softer, and scarcely tender on pressure. The patient's spontaneous expression is—‘It is wonderful how I can bear it handled now, and I could not stand a feather touching it last night.’ The following are now the circular measurements of the right leg :—

		Decrease in 24 hours.
Mid patella	17 inches.	$1\frac{1}{2}$ inches.
Six inches below . . .	$15\frac{7}{8}$ „	$2\frac{1}{8}$ „
Round malleoli . . .	12 „	2 „

The strips of pasteboard were remoistened to fit the shrunken limb, and bandaged to it in a lattice-work over cotton wool, with increased pressure. The application last night, though conducted most gently, caused occasional exclamations of intense pain; but the patient bore it to

night, though executed comparatively roughly, without the least pain."

The same dressing was repeated daily, and at the end of a week the two legs were of equal size.

Admitting the beneficial influence of rest and position, there can be no question that the immediate relief of pain and the rapid subsidence of swelling were chiefly due to smooth elastic pressure. A similar plan of treatment employed in cases of severe sprain and after other injuries attended with great tension, heat, and pain, is followed by equally satisfactory results,—almost immediate ease and rapid subsidence.

Doubtless a very great deal depends upon how pressure is applied. If you bandage a limb firmly with a strong calico roller over ordinary fracture pads, or dense common wadding, against wood or iron splints, the risk is unquestionable; but if you use the softest materials, such as you are in the habit of seeing used in this clinique, especially if you use these beautifully elastic pads and soft bandages you will have reason to congratulate yourselves upon admirable results. To quote from my *Clinical Lectures on the Treatment of Wounds*,—*

"Of all surgical agencies none so beneficent as compression, none requiring more delicate manipulation, none so inadequately appreciated. Under a smooth and uniformly, while lightly, compressing bandage, applied to the head, the trunk, or the limbs, extravasations of blood are absorbed, the healing action is promoted, and a soothing influence is exercised. There must be no constriction—only equable adaptation of surface to surface, with the light pressure which always comforts. There must be no squeezing like that of an old college friend's hand, when seen after a long absence; such pressure as that, on tender parts, is

* London, Churchill, 1878, p. 14.

intolerable constriction. The soothing surgical pressure is like that which you interchange with the hand of a lady, when the pleasure of meeting her is tempered by a respectful regard. Your hand adapts itself to hers, and gently presses it wherever it can touch it, but nowhere squeezes it for fear of offending. Such pressure, when employed by the surgeon in the treatment of injuries, always soothes and heals."

I cannot resist the temptation, to digress for a few moments, to do justice to a distinguished foreigner, who thoroughly understood the surgical value of elastic compression, but whose merits, in this country at any rate, have been almost entirely overlooked. I refer to Professor Burggraave, of Ghent, who, like myself, was a pupil of Baron Seutin, of Brussels. This distinguished surgeon, better than any other, understood the *rationale* of immobility and compression; but it was Burggraave who made it practically safe, with his introduction of a wadding and pasteboard apparatus (*appareit ouaté*). * With the interposition of a sufficient layer of cotton wool, a fairly skilful hand, bandaging a congested or inflamed limb, soothes and heals with the most perfect safety and comfort. While that is true of good cotton wool generally, I have no hesitation, after considerable trial, in saying, that our absorbent gauze and cotton wool pads are superior for the purpose, to all other appliances with which I am acquainted.

I am at present attending a very critical case, with my friend Dr. James Russell, in which the applicability of these materials to a variety of purposes is strikingly illustrated. The patient has slight hæmorrhoids and prolapsus of the rectum, a weak heart and pulmonary congestion. The condition of the rectum is perfectly relieved by a borax and

* Nouveau Système de Pansements Inamovibles, par le Docteur Burggraave, avec Planches, Bruxelles, 1853.

glycerine lotion applied with lint and oiled silk, over which one of these soft pads exercises most comfortable pressure, at the same time absorbing discharge from the edges of the dressing, and thus preventing very great discomfort. To the chest, a linseed poultice was applied, but, though made very light, its weight was intolerable. The greatest comfort is experienced however, from one of these layers of absorbent cotton in a double layer of similar gauze. When held before the fire the material puffs up, and is placed on the chest warm and soft as the finest down.

Dr. Russell, with myself, thinks so highly of this material that I must disclaim all originality in preparing it. The idea was suggested to me long since, in reading the chapter on muslin and cotton wool, in the racy and most instructive essays on "Simplified Surgery,"[†] published at Brussels in 1842, by Mayor of Lausanne. I had often tried the application, but it was evident that the famed muslin manufactories of Switzerland had furnished better materials than I had hitherto been able to obtain; I found that ordinary cotton wool and muslin did not work up well. This absorbent gauze and cotton wool, however, is perfect; and I foresee that in many other cases, especially in dressing burns, blisters, and bed sores, the new tissue cannot fail to prove most useful.

To refer again to the absorbent power of the pads; it is of very great service in foul ulcers and incurable wounds. A case of extensive sloughing ulcer of the foot, which I was lately attending in consultation with Dr. Rosten, threatened the loss of the limb, until we adopted these pads with elastic pressure. The improvement was then rapid and continuous.

[†] La Chirurgie Simplifiée ou Mémoires pour servir à la Réforme et au perfectionnement de la Médecine Opératoire; par Mathias Mayor, Bruxelles, 1842. Chap. de la mousseline avec ou sans le coton, p. 104, et seq.

My friend and colleague, Dr. Sawyer, has entrusted to my care a case of ulcerated recurrent cancer of the breast in a lady, who derives the greatest comfort from these anti-septic absorbent pads and bandages.

As already hinted, powerfully as the pads take up fluid, they are not sufficient to dispense altogether with the use of drainage tubes. Let me recall to your recollection the recent case of Mrs. Edridge in Ward 5, in which I used the absorbent pads after operation.

The removal of the tumour from the top of the left shoulder and side of the neck involved an extensive dissection. The wound measured $8\frac{1}{2}$ by $8\frac{1}{2}$ inches; the great vessels and the brachial plexus were exposed, and the apex of the lung projected with each inspiration into the bottom of the wound. Not a single bad symptom followed, and the



patient was out of bed at the end of a week; convalescence being rapid and uninterrupted. I brought the edges of the wound together by silver sutures, and placed a drainage tube in the two angles. Over the wound I adjusted absorbent pads with compressing bandage, but the drainage tubes were left projecting, and separate pads placed over each of them, and lightly fixed with a turn of bandage. In this way absorbent pads could be changed, without

disturbing the greater part of the wound, which healed in the most satisfactory manner.

By such a plan of dressing, which requires mechanical adaptation according to the part operated upon, I found it easy to reconcile frequent removal of discharges with that perfect rest which is most conducive to wound healing. In this case the absorbent cotton proved most valuable, and I have no doubt that



in practice these absorbent and antiseptic gauze and cotton pads will prove very safe, convenient, and comfortable. To have at command, at one and the same time, dressing materials suitable for medical, surgical, and obstetric purposes, combining such important physical and chemical properties as elasticity and antiputrescence, is a matter of very great practical importance.

You know that the materials which we employ largely contain antiseptics. Southall's hospital plaster, which I use in preference to all other plasters, is prepared with Terebenthinate resins. Tenax, carded oakum, and similar materials abound in tar. Styptic colloid is at least as powerfully antiseptic as the compound tincture of Benzoine, practically the analogue of the Balsamum Traumaticum, of which the surgeons of the last century were so fond. The well known hospital red wash, with its zinc and compound tincture

of lavender, is antiseptic ; the preparations of turpentine, alcohol, charcoal, and earth, are pre-eminently such. When I wrote my papers on the present state of surgery in Paris, in 1867, I found Maisonneuve, at the Hôtel Dieu, had been in the habit of employing, for six years, an antiputrescent lotion, containing carbolic acid in large dilution. Demarquay's glycerine dressings of the same date, Campbell de Morgan's chloride of zinc, and many similar applications, all had one common excellent object, to counteract putrescence. What I always endeavour to impress upon you is, to keep your attention fixed upon first principles and essentials, which in wound-healing are—rest, position, pressure, and perfect drainage.

Everything is important that conduces to the ease and comfort of the patient. To meddle is to irritate, and irritation is opposed to healthy nutrition, which is essential to the safe, painless, and rapid repair of wounded structures, which is so powerfully promoted by absolute rest.

My friend and colleague, Professor Wilders, has kindly allowed me to make use of the notes of the case of compound fracture of the humerus now in the adjoining ward under his care. At first, and for some days, the limb was dressed under the carbolic spray, whenever discharge permeated ; so great was the constitutional irritation that dry pads, pressure and infrequent dressing were substituted, with the immediate effect of relief of pain, fall of the temperature, and most satisfactory progress of a formidable injury.

In wound treatment, the most patient gentleness in every manipulation, the most jealous watchfulness of constitutional states, the most rigorous abstinence from unnecessary meddlesomeness are essential. In carrying out these principles, the appliances from Messrs. Southall Brothers and Barclay's laboratories, will be found of the utmost

utility. Obstetricians to whom I have suggested the use of these pads in child-bed, instead of napkins, have approved the idea and put it to the test of experience, which has been so far unanimously satisfactory. It is obvious that it must be most conducive to purity, and opposed to infection, to receive the natural discharges into a very readily absorbent and powerfully antiseptic pad, of downy softness, that is changed as often as is necessary and immediately burnt. On this point, however, having no obstetric practice myself, I cannot speak with any authority, and only venture to suggest

“One science only will one genius fit,
So vast is art, so narrow human wit ;
Not only bounded to peculiar arts,
But oft in these confined to single parts.”*

I shall be quite satisfied if, in striving to do my best to fill my single part, I convey to you information, which, in practice, you will find conducive to your patients' comfort and safety, for it then cannot fail to reward your own and my endeavours.

*Pope's Essay on Criticism.



BY THE SAME AUTHOR.

I.

On the Treatment of Wounds.

With Engravings, Crown 8vo, 5s.

"A choice little volume, printed in bold type, and containing facts and suggestions worthy of the consideration of all who are engaged in the active practice of surgery, treated in Mr. Gamgee's fluent and agreeable manner, is one which is certain to be perused and studied with profit."—*Medical Times and Gazette.*

"The way in which this book illustrates the truth and value of the ordinary principles of surgery is deserving of very great praise. . . . Mr. Gamgee fortifies his statements by interpolating a number of well-observed cases, many of which are not less convincing than surprising."—*Lancet.*

"Throughout his work Mr. Gamgee appears as a champion of conservative surgery in its highest degree of development. The book is well calculated to advance the practice of the great art of which he is an able teacher."—*British Medical Journal.*

"Mr. Gamgee's views cannot fail to be appreciated by all who desire rational and true principles of surgery to prevail."—*The Students' Journal and Hospital Gazette.*

II.

The Treatment of Fractures of the Limbs.

With Plates, 8vo, 10s. 6d.

"The writing of this volume is brilliantly good."—*Practitioner.*

"The work is essentially original."—*British and Foreign Medico-Chirurgical Review.*

"We should advise all surgeons to read this interesting work."—*Edinburgh Medical Journal.*

"The work carries the impress of being the outcome of much earnest study and thought, and the result of a wide experience. . . . To all who are concerned in the treatment of fractures it affords a large supply of material for thought."—*Medical Times and Gazette.*

III.

History of a Successful Case of Amputation at the Hip Joint.

The Limb 48 inches in circumference, 99 pounds weight.

WITH FOUR PHOTOGRAPHS BY SARONY AND PIERRE-PETIT.

"The case reflects great credit on Mr. Gamgee. The accuracy of his diagnosis, the skill and courage which he showed in performing the operation, the wisdom which regulated the after treatment, are all features which deserve commendation."—*British and Foreign Medico-Chirurgical Review.*

J. & A. CHURCHILL, New Burlington Street.



